FOR DEBATE: HEALTH SERVICE SUPPORT PLANNING FOR LARGE SCALE DEFENSIVE LAND OPERATIONS (PART 2) – PRE-PRINT

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Abstract

This is the second of two articles that considers the medical planning implications of large scale defensive military operations. This paper describes a unified approach to Theatre Level Health Services Support planning based on four phases: collection, hospitalisation, evacuation and reception. It highlights the need for a modular and agile system of medical capability building blocks that can be grouped together for specific military medical challenges. It also reintroduces the concepts of mass casualty (MASCAL) and the medical reserve. These two papers are designed to encourage debate around how we should be organised to face the new challenges of HSS in potential peer on peer military operations.

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Introduction

This second paper builds upon the interpretations of the new military context and medical planning factors introduced in the first paper. The previous paper highlighted the need for a networked, agile, and layered integrated health services support (HSS) system that could adapt to an increasingly lethal close battle environment, the potential use of chemical, biological, radiological and nuclear (CBRN) weapons and the likelihood for local mass casualty events. This paper considers how to integrate these ideas into a Theatre Level HSS Concept.

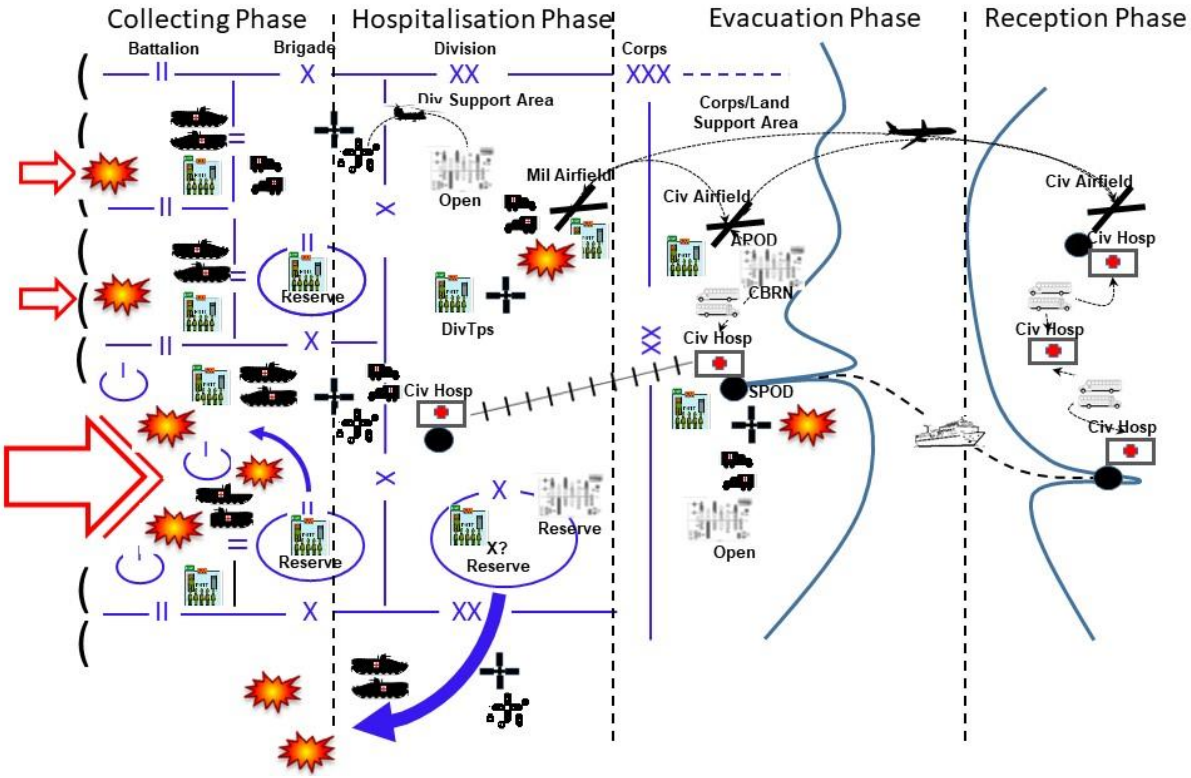
Theatre Level HSS Concept

The principles of the operational patient care pathway (OPCP) and the concept of the HSS to the joint operational area remain valid. However, these concepts need to be refined to ensure that the medical plan can cope with multiple concurrent casualty incidents within a single theatre and can organise capability and capacity to cope with much higher casualty numbers, and that medical capabilities can survive in the new military environment. In the Cold War a similar need led to the concept of functional approach ‘zones’ of medical support (1,2). These were; the Collecting Zone, the Hospitalisation Zone, the Evacuation Zone and the Reception Zone. This concept remains valid, however, reflecting the 360 degree character of contemporary conflict, it may be better to conceive of these as dynamic, conceptual ’phases’ rather than fixed, geographical ’zones’.

This is illustrated at Figure 1.

Figure 1

Theatre Level Health Service Support in Large Scale Defensive Land Operations
(response to attack)



Collecting Phase. The Collecting Phase encompasses the activity of the entire pre-hospital care (PHC) component of the OPCP. At scale, Medical Regiments and associated organic unit medical assets will operate as a Brigade Medical Groups, to collect casualties and 'clear' the battlefield. A network of casualty clearing points (provided by Isolated Combat Medical Technicians (CMT) or Pre-Hospital Treatment Teams (PHTT) will receive, triage, stabilise and handover casualties for evacuation. Casualty clearing stations (provided by PHTTs or Medical Reception Stations (MRS) Battlegroup or Brigade controlled Medical Rendez-vous Points (Med RVs) will need to act as holding points in which patients can be triaged and 'pulsed' by medical evacuation to a hospital. When required, it will be necessary to augment a GP-led MRS with a Ground Medical Emergency Response Team to generate 'a dressing station' (DS) like capability providing the highest level of PHEC. Extending this principle of modularity further, a SHQ, MRS, Ground MERT (from a Med Regt) and Forward Surgical Team (deployed forward from a Field Hospital) must be capable of coming together seamlessly to establish a task-specific Forward Resuscitation and Surgical Group (FRSG). Where Forward AE is available this will need to be carefully regulated to meet rapidly changing tactical and clinical need.

Throughout the operation medical planners will need to rapidly adapt the healthcare system by manipulating capability building blocks to enable tactical actions. To achieve this, medical planners will need to be fully integrated at every level of command and fully empowered to make the requisite decisions. To generate and

maintain tempo transition phases will need to be minimised and there will be insufficient time to redesign medical capability in contact; therefore all medical capability building blocks will need to be inherently agile by design.

When not functioning in the DS role in response to large numbers of casualties, the MRS provides primary and community care clinical services using general practice, dental, rehabilitation, mental health and environmental health professionals. This is particularly relevant during Battlegroup rehabilitation and will continue to replicate the standards of care provided by a similar clinical service in the Firm Base but adapted to the realities of the operational environment.

Where the enemy has broken through, units will withdraw to new defensive locations. Local counter-attacks will attempt to disrupt the enemy advance. It is likely the whole area will be under indirect attack and so command and control may be disrupted. All units, including medical, may have to act independently under mission command.

An operational or strategic counter-attack will require a HSS plan that supports manoeuvre. This will require open medical facilities ready to receive casualties from the first contact battle. Medical units will also need to be packed on wheels so that they can keep up with the advance, opening when large numbers of casualties require treatment.

Hospitalisation phase. During the Hospitalisation phase patients receive stabilising clinical care. This includes diagnostic support, clinical interventions and intensive medical and nursing care. Whilst the most emergent casualties might receive some ‘hospital services’ in the FST, the deployed hospital care system must have sufficient capacity for all patients requiring hospitalisation. It is highly likely that hospitals will be echeloned with forward and rear hospital groupings.

’Forward’ Field Hospitals will be focused on providing acute care and need to be manoeuvrable (capable of supporting Formation manoeuvre) and modular (capable of operating in a dispersed configuration for protection and/or to support dispersion). While all medical facilities will have to be able to function under the threat of a CBRN attack, a hospital may be nominated to be the specialist receiving hospital for CBRN casualties in order focus effort and to minimise any risk of contamination of the evacuation system by CBRN agents. ’Rear’ based Force Support Hospitals will be located in a safe area, will be static, and provide a wider range of clinical services. Force Support Hospitals will be capable of definitive treatment, thereby maximising retention of fighting power in Theatre, or holding casualties prior to Evacuation.

Where deployed hospital care is echeloned in this manner, the Hospitalisation Phase will include a period of intra-theatre tactical evacuation. To maximise patient safety, it is likely that many patients will be evacuated by air supported by specialist critical care air support teams (CCAST). During period of very high demand this may require supplementation by high volume clinical transport services such as coaches

or ambulance convoys in order to change MEDEVAC from an emergency response to a pulsed, planned movement.

The evacuation system must be able to regulate non-UK patients to the appropriate receiving hospital including transfer to the local civilian system. It may also be possible to include the local civilian health system as part of the HSS plan for UK patients. This may include the use of civilian ambulances, coaches and trains to support patient evacuation.

Evacuation phase. The Evacuation Zone covers the functions of preparing patients for Strategic Evacuation (STRATEVAC) and loading them into STRATEVAC platforms. This requires a clinical holding unit and a medical loading unit alongside the 'port' function that can receive the mass transport platform with its associated medical escorts. In the recent past, these functions have been highly specialised within the RAF medical services including the creation of the Hospital Staging Unit that combined the holding, preparation and loading function into a single medical unit. However, it may be necessary to use alternative modes of mass casualty transport including civilian aeroplanes and boats if large number of casualties require STRATEVAC.

Reception phase. The reception phase will normally take place within the UK. It is likely that the national 'Gold Command' level of NHS bed management within the NHS Emergency Planning, Resilience and Response Plan will need to be activated for large numbers of military casualties being received from overseas. The NHS will need to advise the military aeromedical evacuation system of the location of available NHS beds, especially the Intensive Care and Burns Care beds as these will require national control. Military patients may need to be distributed across the whole of the NHS and so there may need to be military welfare and other support services available dispersed across many NHS sites. The Armed Forces will need to provide the 'Role 4' effect to these military patients by ensuring that military personnel are available to provide clinical advice, welfare and social support to the patients and their social group wherever they end up in the NHS system.

Historically, reception has been a national responsibility. Given that it is likely that different nations see a peak of casualties at different times, a fully integrated healthcare system could see multi-national burden sharing becoming a matter of routine. This will add another level of complexity to reception arrangement within the UK.

Execution

Executing this Theatre Level HSS Concept requires our approach to managing HSS to be reframed for the scale and complexity of casualty movement and the medical system. Over the past 10 years there has been considerable success in introducing inherent agility, air-land integration, and layering of clinical capability in medical operational capability, but there is still a lot more that can be done. However, agility

in capability is only of value if there is the corresponding agility of mind to exploit it. Achieving the latter is in part education and training, but it will also require a shift in culture to fully empower junior commanders, to become comfortable with ambiguity and, most importantly, to understand and manage clinical risk. It is likely that the specific requirements of Command and Control, Co-ordination, Computers and Information (C4I) will need specific consideration. This will require medical staff branches within command headquarters to have sufficient capacity to operate across the 24 hour cycle and to be able to communicate to medical units and evacuation platforms across organisational boundaries. The volume of medical information needed to be processed and managed to inform medical evacuation decisions is likely to be beyond most people's previous experience. This will have to function under the threat of cyber warfare and blocking of access to the electromagnetic spectrum by the opposition. There is likely to be additional co-ordination and liaison staff in medical units and command organisations to track coalition patients across different nation's medical units. It will be essential to establish and refine all aspects of medical interoperability during any pre-conflict period so as to achieve the highest possible level of integration across the Coalition medical system, including with the host nation.

The allocation of real estate for medical units is likely to prove challenging as they require specific features (access, security, water, power, environmental protection) that is likely to be very scarce. There will be a specific decision about the use of the Red Cross as a protective emblem as this might indicate the distribution of combat forces or be used from targeting if the opposition does not respect the Geneva Conventions.

There will significant pressure on clinical leadership and clinical decision-making. Triage choices will become much more challenging, especially in MASCAL situations. Clinicians will have to accept 'rationing' of time and clinical resources such as imaging and blood so as to ensure equity of access for the largest proportion of the patient flow. Clinical standardisation becomes even more important as the amount of clinical time to care for each patient is reduced. Medical facilities will have to accept the probability of 'prolonged care' in both pre-hospital care and deployed hospital care.

Chemical, Biological, Radiological and Nuclear (CBRN) weapons are considerably more likely to be used than previously experienced on recent military operations. This will require the medical services to be competent to treat casualties from these agents and also to operate medical evacuation and medical facilities under the threat of these weapons. It will be necessary to refresh our concepts for how both functions are undertaken.

Re-learning experiences from the past

Overall, there are very few aspects of this new challenge that will require completely new solutions. Whilst there have been considerable advances in clinical

interventions for trauma casualties, the fundamental challenge in military medicine of matching evacuation and clinical treatment to the needs of military patients remains unchanged. Therefore we can derive considerable value in historical study and research to re-learn the strategic and operational solutions applied by our predecessors to similar challenges in World War 1, World War 2 and during the Cold War. The Staff Ride remains an excellent educational vehicle for this type of learning (3). In doing so we must critically appraise the lessons from the past rather than accepting at face value; as this article demonstrates the future is likely to involve a blend of lessons from the past and contemporary innovation. As an example, we have demonstrated the clinical effectiveness of the Medical Emergency Response Team (MERT) as a helicopter-based medical evacuation capability compared to other helicopter-based clinical groups (4). However in a peer-on-peer conflict, our approach to the use of Air MERT might shift to collecting the most severely injured from dismounted Ground based MERT grouped with a MRS (a “Dressing Station”) or a FRSG

Conclusions

These two papers have examined the HSS challenges associated with large scale defensive operations. It is important that the medical services align to emerging thoughts about the organisation of combat and combat services support capabilities as a result of the change in the threats to UK national security. Whilst the fundamental principles of HSS remain unchanged, their application will need to adapt from the experience gained from HSS delivery in lower scale counter-insurgency operations. This requires a new Theatre Level Concept for HSS that builds upon the OPCP and applies to circumstances where there will multiple, concurrent medical major incidents. This requires a much larger medical system organised according to functional phases comprising Collecting, Hospitalisation, Evacuation and Reception with medical units and evacuation platforms organised to deliver these functions. This will also require a C4I system capable of managing much more information, delivering dynamic air-land integration and interoperability with coalition partners, including host nation. We will need to consider how our predecessors organised themselves to solve the military medical problem at this scale in previous conflicts in order to interpret their lessons into the modern day. We must though not disregard the lessons learnt during recent deliberate ops, specifically in Iraq and Afghanistan; most importantly, this will require both the agility of force design and the corresponding agility of mind if we are to capable of succeeding in the challenges that large scale war-fighting will inevitably bring. Readers of this Journal are encouraged to think about these concepts and develop them further through debate.

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